

# Slavic prefixes inside and outside VP

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## Abstract

Most Slavic prefixes can be assigned to one of two large categories, lexical and superlexical. The lexical prefixes are like Germanic particles, in having resultative meanings, often spatial, but often idiosyncratic. The superlexical prefixes are like adverbs or auxiliary verbs, having aspectual and quantificational meanings. I present a syntactic account of the two types of prefix, arguing that the lexical ones are to be analyzed essentially like the Germanic particles, and that their VP-internal position accounts for many of their properties, while the superlexical ones originate outside VP.

## 1. Introduction

Slavic prefixes are notoriously heterogeneous. One glimmer of order in the dense thicket of data is the proposed distinction between ‘lexical’ and ‘superlexical’ prefixes.<sup>1</sup> The two types are illustrated here with three examples: the transparently resultative example in (1a) meaning ‘throw or kick in’ and the idiosyncratic example in (1b) meaning ‘give up’ are lexical, while the example in (1c) meaning ‘start throwing’ is superlexical (see the Introduction to this volume, Svenonius 2004d, for explanation of abbreviations and glossing conventions).

- (1) a. Helder za-brosil mjač v vorota angličan.  
Helder *into-threw* ball *in* goal *English*  
‘Helder kicked the ball into the English goal’

\* Many thanks to the participants in the Slavic prefixes project, especially Eugenia Romanova, as well as Patrycja Jabłońska, Vyara Istratkova, and Gillian Ramchand for extensive discussion. I also benefitted greatly from working with Kateřina Součková, Nina Rojina, Polya Vitkova, and Nataša Miličević on this topic, and from conversations with Tanja Miličev, Jakub Dotlačil, Monika Bašić, Marina Diakonova, Yulia Rodina, Hana Filip, Andrew Spencer, Asya Pereltsvaig, and Hagit Borer. Thanks also to audiences in Geneva, Lund (GLOW), Novi Sad, Lublin (EGG), Oslo, Oxford (LAGB and workshop on aspect), Edinburgh, Leipzig (FASL), and Tromsø, where I presented various aspects of this material in 2003. I received travel support from Erasmus (Geneva), Lund University (Lund), the Norwegian Research Council’s fund for cooperation with South-Eastern Europe (Novi Sad), Oxford University (Oxford, workshop on aspect), the Northern Scholars’ fund (Edinburgh), and CASTL and the University of Tromsø (the rest), to all of whom I am grateful.

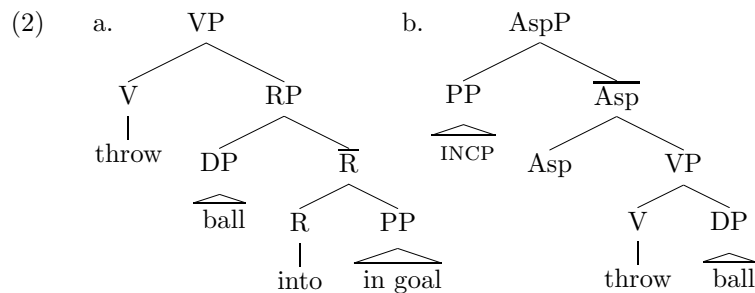
<sup>1</sup>The terminology may be due to Smith (1991); Townsend (1975) used the term ‘sublexical’ for what I am calling superlexical, and the term used by Isačenko (1960) is usually translated as ‘Aktionsart’ (originally *soveršajemostj glagoljnogo dejstva*).

- b. David sovsem    za-brosil    futbol.  
*David completely into-threw soccer*  
 ‘David completely gave up soccer’
- c. Ricardo nervno    za-brosal    mjač.  
*Ricardo nervously INCP-threw ball*  
 ‘Ricardo began to nervously throw the ball’ (Russian)

In this article, I argue that the split between lexical and superlexical prefixes is basic and important, and that it should be analyzed in terms of the place of the different prefixes in a syntactic decomposition of the clausal structure.

Several distinctive properties of the different kinds of prefixes follow immediately from the identification of the lexical prefixes as elements internal to the verb phrase while superlexical prefixes are located outside it. Proposals for differing structural locations for different prefixes have been made before (notably Babko-Malaya 1999; 2003), but this one is couched in a specific understanding of the place of the lexical prefixes in a decomposed verb phrase based on previous work on the Germanic verb-particle construction (Svenonius 1994; 1996a; 2003a, Ramchand and Svenonius 2002), along with an explicit theory of syntactic lexical decomposition (Ramchand 2003).

In rough outline, what I suggest is that lexical prefixes like that in (1a) and (1b) be analyzed essentially as small clause predicates, as sketched in (2)a assuming a R[esult] head below V, while superlexical prefixes like that in (1c) are essentially adverbial, as suggested schematically in (2)b, assuming an Asp[ect] head above V.



I argue below that many apparently distinct and independent properties of different prefixes can be unified under this basic division between VP-internal ‘lexical’ prefixes and VP-external ‘superlexical’ prefixes. Most importantly, I suggest that lexical prefixes, as predicative heads subordinate to V, have certain predictable effects on argument structure and interpretation which are impossible for superlexical prefixes. Furthermore, lexical prefixes are unique in each VP, as their structural position is unique—a single V cannot have more than one resultative complement. In contrast, the superlexical prefixes, which are more similar to adverbs, can in principle cooccur with each other, subject to various stringent restrictions, as

illustrated with Bulgarian examples here, from Istratkova (2004).

- (3)
- a. po-na-razkaža  
DLMT-CMLT-*narrate*  
‘tell a little of many’
  - b. iz-pre-razkaža  
CMPL-RPET-*narrate*  
‘renarrate completely’
  - c. za-pre-razkaža  
INCP-RPET-*narrate*  
‘start renarrating’
  - d. iz-po-razkaža  
CMPL-DSTR-*narrate*  
‘narrate completely one by one’
  - e. iz-po-na-pre-razkaža  
CMPL-DSTR-CMLT-RPET-*narrate*  
‘renarrate completely one by one, of many’ (Bulgarian; Istratkova 2004)

Superlexical prefixes can also occur with lexical prefixes; in such cases, the superlexical prefix always appears outside the lexical prefix, as predicted by the structure (assuming only that the lexical prefix cannot cross the superlexical prefix, rather unsurprisingly). This is true in the Bulgarian examples above, in which *raz-kaža* ‘narrate’ decomposes literally into *around-say*, but also holds for less idiomatic examples like the ones in (4).

- (4)
- a. po-vy-brasyvatj  
DSTR-*out-throw*  
‘throw out one by one’ (Russian)
  - b. \*vy-po-brasyvatj  
*out-DSTR-throw*
  - c. po-w-chodzili  
DSTR-*in-walk*  
‘walk in one by one’ (Polish, Jabłońska 2004)
  - d. \*w-po-chodzili  
*in-DSTR-walk*

I also argue below that the lexical idiosyncracies typical of the lexical prefixes are not possible for superlexical prefixes, and that this, too, follows from the structure proposed, given independent observations about the local domains of idioms (Marantz 1984; 2001). Supporting evidence is also provided from the adverbial meanings of the superlexical prefixes, the distribution of the secondary imperfective, and from nominalizations.

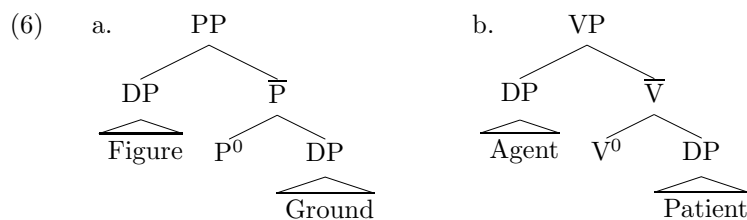
## 2. Spatial particles cross-linguistically

Many languages have morphemes which lexicalize spatial relations. These can be fruitfully characterized in terms of Figure and Ground (Talmy 1978; 2000): the Figure is the entity or substance in motion or located with respect to some landmark, the Ground. The Ground is understood as a reference point for the evaluation of the location of the Figure. Consider, for example, the Figure-Ground relations expressed by *up*, *above* and *over*, as illustrated below; each entails that the Figure (the cat) is located high or moving upwards on a vertical axis relative to the Ground (the tree, the robin), but varying in specifics; *up* tends to pick out a path (cf. Jackendoff), *above* tends to pick out locations which are simply higher than the Ground, and *over* tends to place the Figure directly up from the Ground (cf. Svenonius 2004e).

- (5) a. The calico cat was up the maple tree.  
 b. The cat was above the robin.  
 c. The cat was over the robin.

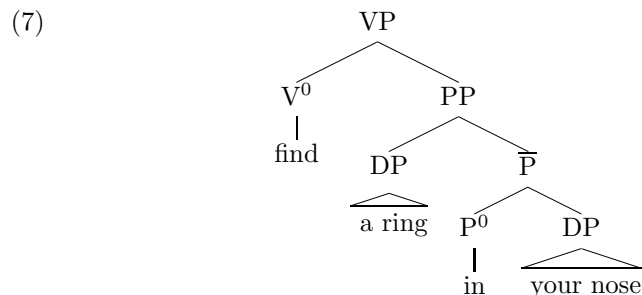
A preposition like *in* or *on*, in contrast, has little or no content in terms of the three cardinal spatial dimensions; the relations these prepositions express are more basically containment and contact, respectively (with *on* also having some secondary sense of “support”; see Bowerman 1996 for some discussion). *In* presupposes that the Ground is a container, while *on* presupposes that the Ground is a surface; directional expressions in languages often place restrictions on the type of Ground (e.g. container, water, human, etc.) or on characteristics of the Figure (e.g. having a vertical axis, having a particular shape, etc.).

I have proposed that when spatial relations are lexicalized as adpositions, the complement of the adposition is always the Ground (cf. Svenonius 1994; 2004a;e).<sup>2</sup> Thus the basic configuration for spatial expressions is as in the (6a); compare the tree in (6b) representing the VP-internal subject hypothesis in broad outline (abstracting away from the decomposition of the predicative heads involved).

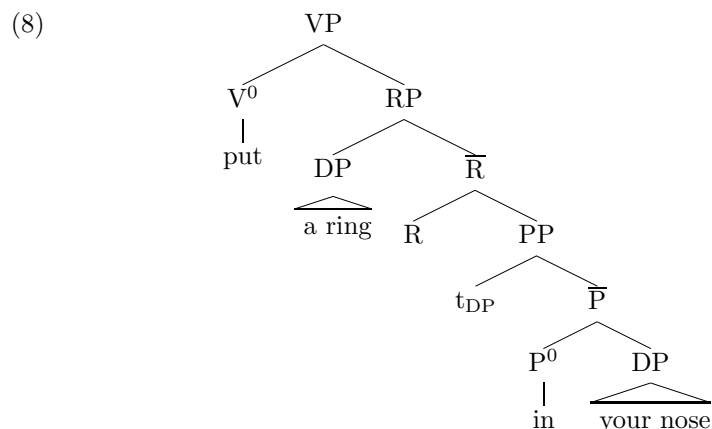


<sup>2</sup>Talmy (2000) gives examples with *of* and *with* in which he argues they take Figure arguments, but I have argued (in Svenonius 2004a) that these should be analyzed differently and that the generalization holds strongly cross-linguistically.

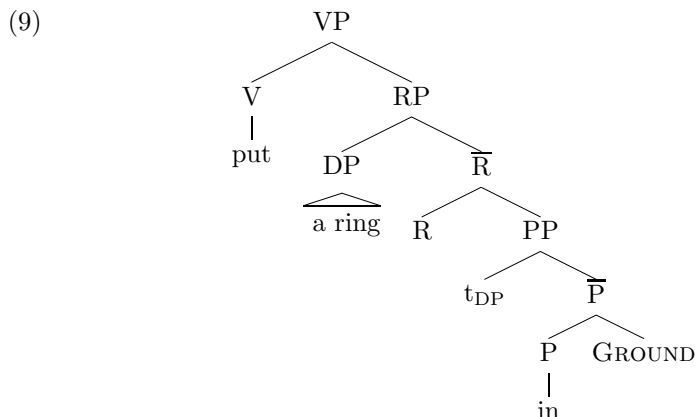
Following Stowell (1981), Hale and Keyser (2002) and others, many expressions traditionally understood to involve two complements to V actually involve a single small clause complement.



The example in (7) is not causative; the verb *find* is interpreted here essentially like a perception predicate. Causative constructions are taken to involve a ‘Result’ projection, already indicated in (2) above (see Ramchand 2003, Ramchand and Svenonius 2002). If a Figure argument always originates in PP (cf. Baker’s 1988 UTAH principle of constancy of theta-assignment), then we can assume that it moves to SpecRP, as indicated in (8).



Grounds may be incorporated to adpositions, as in *therein*, *hereupon*, *whereby*, and so on. Assuming that particles are adpositions with an abstract incorporated Ground, verb-particle constructions can be represented roughly as in (9) (as proposed in Svenonius 1994; 1996a;b).



The Germanic languages illustrate a great deal of microparametric variation regarding the realization of such structures. For example, in Danish, the particle obligatorily follows the Figure, while in Swedish it precedes, and Norwegian and Icelandic, like English, allow both orders (Taraldsen 1983; 2000, Svenonius 1996b).

In OV Germanic, the particle tends to show up left-adjacent to the main verb (cf. Zeller 2001, Lüdeling 2001, for recent discussion of German), though there is variation in case auxiliaries or other material precede the main verb within the verbal cluster (Taraldsen 2000).

Cross-linguistically, too, the principles of Figure-Ground asymmetry are observed, as across Germanic, and each of the microparametric options is observed. A few examples of spatial or directional particles in non-Germanic languages are provided in (10) (see Svenonius 2004a for more discussion).

- (10) a. Phúcè vī    **the** lō    né hi.  
           *child throw **up** stone at house*  
           ‘The child threw stones up at the house’ (Eastern Kayah Li;  
           Solnit 1997:168)
- b. Péter nem olvastz ókel **fel**.  
           *Peter not read them **up***  
           ‘Peter didn’t read them out’ (Hungarian; É. Kiss 2002:57)

In the Eastern Kayah Li example in (10a), the Ground of *the* ‘up’ might be implicit but might also be taken to be the house, expressed in its own prepositional phrase (so that the Ground of *né* ‘at’ is necessarily the house, cf. (6) above). The Eastern Kayah Li example has a literally directional meaning, while the Hungarian example in (10b) illustrates an abstract or metaphorical extension of a directional meaning. Both examples translate fairly readily into English.

Interestingly, a number of unrelated languages show something reminiscent of the particle shift familiar from the Germanic languages.

- (11) a. Thug e an còta **dheth**.  
           *gave he the coat off*  
           ‘He took his coat off’  
       b. Thug e **dheth** an còta.  
           *gave he off the coat*  
           ‘He took off his coat’ (Scots Gaelic; Ramchand and Svenonius 2002)

The surface similarity of the alternation displayed here to the English pattern suggests that these various otherwise rather divergent languages have converged on a single structure for expressions of directed motion.

In another parallel to Germanic, particles are often found left-adjacent to the verb, as illustrated in (12) (see also Craig and Hale 1988).

- (12) a. Nmpi ay-**cra**-wampak-ŋa-ŋkt.  
           *leaves HORT.PL-**about**-throw-IMPERATIVE-PAUCAL*  
           ‘Let us few distribute messages’ (Yimas; Foley 1991:350)  
       b. Copík am-**itta**-sófk.  
           *beads 1SG-**on.ground**-pour.out*  
           ‘My beads were poured out on the ground’ (Koasati; Kimball 1991:117)

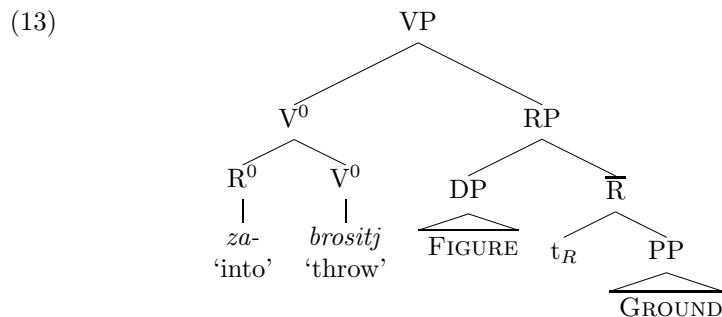
Cross-linguistic patterns like the ones seen here suggest that the verb-particle and separable prefix structures familiar from Germanic languages are by no means peculiar to them, but are fairly typical manifestations of the systems that UG makes available for the expression of directed motion and related notions. It should come as no surprise, then, that the Slavic languages also have developed a similar system.

Thus, I will assume that expressions of directed motion, resultatives, and related constructions are cross-linguistically projected essentially as in the trees above, but with extended projections in place of the simple VP and PP in the diagrams above. Word order variation is taken to be the result of movement. If both standard phrasal movement and head movement of the Bakerian type (or any one of its many equivalents) are countenanced, then there are at least two routes to V–Prt–DP order, namely head movement by the particle to a head position below the verb, as in Svenonius (1994; 1996a), Ramchand and Svenonius (2002), and phrasal movement to a phrasal position below the verb, as in Svenonius (2003b); and there are at least two routes to Prt–V–DP order (or DP–Prt–V), namely head movement of the particle to V (cf. Baker’s 1988 P-incorporation) and phrasal movement of the particle to a position to the left of V, as suggested by Taraldsen (2000).<sup>3</sup>

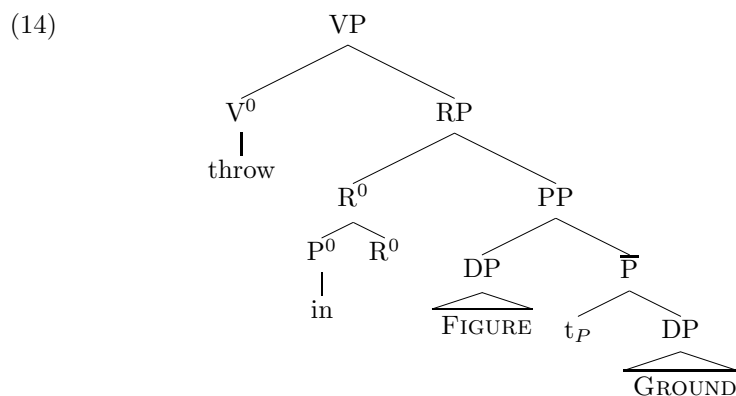
In the usual case, a Slavic prefix is a bare head obligatorily adjacent to the main verb, a situation perfectly compatible with standard assumptions

<sup>3</sup>Zwart (1997) proposes phrasal movement to derive AP-V in Dutch resultatives, but does not discuss particle movement specifically.

about head movement. Head-movement approaches to Slavic prefixes have been suggested tentatively by Dimitrova-Vulchanova (1999) and Babko-Malaya (2003), and less tentatively by Fowler (1996) and Rojina (2004), at least, essentially along the lines sketched here, in simplified  $\bar{X}$ -structures, using Ramchand's (2003) RP.



This is essentially identical to the structure proposed for the English verb-particle constructions in Ramchand and Svenonius (2002), except that there, P is argued to move to R (under particle shift, optionally) rather than R to V. Compare (14) below with the non-shifted alternative in (9) above.



Besides the question of what moves, a difference between the Russian (13) and the English (14) is that in the former, prefixes are actually category R while in the latter, the particles are category P. Alternatively, the PP could be expanded in (13) to include base sites for the prefix and the Figure, in which case the base structures would be fully identical for English and Russian. I return to this issue in §5; see also Svenonius (2004c).



### 3. Slavic lexical prefixes and Germanic particles

In this section, I aim to establish the similarity of Germanic particles to Slavic prefixes. The parallels have been discussed many times, for example by Spencer and Zaretskaya (1998), Dimitrova-Vulchanova (1999), Lindvall (2001), Vitkova (2004), Rojina (2004), and others.

Some of the previous accounts have taken the Slavic prefixal construction to be primarily morphological, and therefore syntactically distinct from the Germanic particle system. On the assumption, however, that the mapping of syntactic representations onto conceptual structures is uniform for all languages (linguistic variation being generally restricted to syntax, phonology, and the lexicon), the best analysis (all else being equal) is one like the one sketched here, in which two different languages' syntactic representations for the same conceptual structures are the same.

#### 3.1. The category of prefixes and particles

The Germanic particles are drawn, broadly speaking, from the prepositional inventory (cf. Emonds 1985, Svenonius 2004e); that is, most of the particles share categorial features with prepositions (as diagnosed by selection and modification, cf. Emonds) and have as their basic meanings the kinds of spatial relations commonly expressed cross-linguistically by adpositions. Some illustrative examples are provided in (15).

- (15)
- |    |             |                     |
|----|-------------|---------------------|
| a. | give up     | up the tree         |
| b. | drop out    | out the window      |
| c. | goof around | around the fountain |

This is quite clearly the case for the Slavic prefixes as well; nearly all prefixes can be used as prepositions, or are homophonous with prepositions (depending on one's analysis of polysemy and homophony); see, for example, Oliverius (1972), Fowler (1994), Matushansky (2002) (whence the following Russian examples).

- (16)
- |    |   |  |
|----|---|--|
| a. | iz-bežatj<br><i>out.of-run</i><br>'avoid'     | iz doma<br><i>out.of house</i><br>'out of the house' |
| b. | pod-bežatj<br><i>under-run</i><br>'run up to' | pod domom<br><i>under house</i><br>'under the house' |
| c. | pri-bežatj<br><i>by-run</i><br>'come running' | pri dome<br><i>by house</i><br>'by the house'        |
| d. | ot-bežatj<br><i>away-run</i><br>'run off'     | ot doma<br><i>away house</i><br>'from the house'     |

- |    |               |                  |
|----|---------------|------------------|
| e. | v-bežatj      | v dom            |
|    | <i>in-run</i> | <i>in house</i>  |
|    | ‘run into’    | ‘into the house’ |

Though I gloss the two identically here, in some cases the prefix systematically deviates from the prepositional meaning; thus, Russian *pod-* as a prefix tends to mean ‘up to,’ rather than ‘under,’ and a better translation for *pri-* might be ‘at.’ Another example is *za-* which in Russian often means ‘behind’ when it is a preposition, but ‘onto’ as a prefix.<sup>4</sup> Apart from this, the meanings of the prefixes in the above examples are fairly spatially transparent; this is not always the case, as illustrated by the following examples, also based on Matushansky (2002).

- |      |    |                     |                    |
|------|----|---------------------|--------------------|
| (17) | a. | iz-pravitj          | iz lodki           |
|      |    | <i>out.of-drive</i> | <i>out.of boat</i> |
|      |    | ‘repair’            | ‘out of the boat’  |
|      | b. | pod-pravitj         | pod lodkoj         |
|      |    | <i>under-drive</i>  | <i>under boat</i>  |
|      |    | ‘correct’           | ‘under the boat’   |
|      | c. | pri-pravitj         | pri lodke          |
|      |    | <i>by-drive</i>     | <i>by boat</i>     |
|      |    | ‘spice’             | ‘by the boat’      |
|      | d. | ot-pravitj          | ot lodki           |
|      |    | <i>away-drive</i>   | <i>away boat</i>   |
|      |    | ‘send’              | ‘from the boat’    |
|      | e. | v-pravitj           | v lodku            |
|      |    | <i>in-drive</i>     | <i>in boat</i>     |
|      |    | ‘set’               | ‘into the boat’    |

As can be discerned from these examples, prefixes readily form idiosyncratic units with verbs, in fact more readily than prepositions, though they too can have idiosyncratic meanings in the context of individual nouns (e.g. in English *on call*, *on time*, *in luck*, *at last*, *off base*, *under the weather*, etc.). I return to this contrast below, suggesting that it follows from the size of the domain of idiom formation.

In sum, Germanic and Slavic use basically prepositional expressions of spatial relations as verbal augments in a strikingly similar way. I will suggest in §3.5 below that the syntax of P accounts for much of the special behavior of Slavic prefixes.

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<sup>4</sup>Generally in this paper I try to maintain a single gloss for each lexical prefix, which is generally one suitable for the prepositional use, as detailed in the Introduction to this volume. However, for clarity I occasionally use a different gloss. Consistently, I indicate superlexical prefixes with their own abbreviated labels, drawn from Isačenko’s (1960) terminology, or Forsyth’s (1970), in small caps.

### 3.2. Resultativity

The core meaning of the Germanic verb-particle and separable prefix constructions can be characterized as essentially resultative (cf. Bolinger 1971, Fraser 1976, Åfarli 1985, Svenonius 1994); roughly, V DP Prt can usually be paraphrased as ‘cause DP to go to or become Prt by means of V-ing,’ or ‘V such that DP goes to or becomes Prt.’ In this sense the examples in (18) are typical, though *out* and *up* have special meanings here.

- (18) a. Boris wore out his trousers.  
 b. I threw a coin in.  
 c. They’re building up the beach with houses.  
 d. Carry in the coal.

These kinds of examples have ready parallels in the Slavic languages.

- (19) a. Ona is-pisala svoju ručku.  
*she out.of-wrote RFX.POSS pen*  
 ‘She has written her pen out [of ink]’ (Russian; Spencer and Zaretskaya 1998:17)  
 b. U-bacio sam novčić.  
*in-thrown am coin*  
 ‘I threw a coin in’ (Serbian)  
 c. Za-strojavam plaža s kúšti.  
*for-build beach with houses*  
 ‘I’m building up the beach with houses’ (Bulgarian; Dimitrova-Vulchanova 1999:86)  
 d. Při-nesl ze sklepa uhlí.  
*to-carried from basement coal*  
 ‘He brought some coal from the basement’ (Czech; Filip 1997)

The basic resultative nature of this construction is captured by the structure proposed in (13) in §2, given a theory of lexical semantics like that outlined in Ramchand (2003); the difference between the non-resultative (7) and the resultative (8) is in the R projection, which structurally codifies result semantics (and also gives rise to particle shift; compare the absence of shift in non-resultative constructions like *consider the runner out*—\**consider out the runner*).

One of the advantages to this theory is that it postulates that the postverbal DP is not a direct argument of the verb, leading to the correct prediction that the entailments over such DPs may differ compared with simple transitive cases. The clearest illustration of this is the matter of unselected arguments, where a particle either enables an intransitive verb to take an object, as in (20b), or changes the kind of object selected, as in (20e), where *buy [someone] out* means ‘buy [someone]’s stake in a venture.’

- (20) a. They slept (\*the party).  
 b. They slept \*(the party) off.  
 c. Mia bought Johan's stake.  
 d. # Mia bought Johan.  
 e. Mia bought Johan out.

Such examples are easy to find in the Slavic languages.

- (21) a. Sobaka ležala (\*odejalo).  
*dog lay blanket*  
 'The dog lay (\*the blanket)'  
 b. Sobaka pro-ležala odejalo.  
*dog about-lay blanket*  
 'The dog wore out the blanket by lying on it' (Russian; Dimitrova-Vulchanova 2002)
- (22) a. Klounət smja (\*bebeto).  
*the.clown laughed the.baby*  
 'The clown laughed (\*the baby)'  
 b. Klounət raz-smja bebeto.  
*the.clown around-laughed the.baby*  
 'The clown made the baby laugh' (Bulgarian; Slabakova 1997:683)
- (23) a. Marek pil wino/#Janka.  
*Marek drank wine/Janek*  
 'Marek drank the wine/#Janek'  
 b. Marek u-pil Janka winem.  
*Marek at-drank Janek wine.INST*  
 'Marek got Janek drunk on wine' (Polish; Jabłońska 2003)
- (24) a. Seděla si v křesle (\*důlek).  
*sat RFX in armchair depression*  
 'She sat in the armchair'  
 b. Vy-seděla si v křesle důlek.  
*out-sat RFX in armchair depression*  
 'She sat a depression in the armchair' (Czech; Kateřina Součková, p.c.)

Examples where the type of object changes because of a prefix or particle can be quite subtle, for example when *write down* means something like 'record by writing' and excludes creative activity.

- (25) a. She wrote down her thoughts.  
 b. ?She wrote down a book.  
 c. She wrote (up) a book.

The same can be observed for Slavic lexical prefixes.

- (26) a. Za-pisala je svoje misli.  
*down-written is her thoughts*  
 ‘She wrote down her thoughts’  
 b. ?Za-pisala je knjigu.  
*down-written is book*  
 c. Na-pisala je knjigu.  
*on-written is book*  
 ‘She wrote a book’ (Serbian; Milićević 2004)

Similarly, sometimes an object becomes obligatory because of a particle, as in (27b).

- (27) a. Ivan wrote (a letter).  
 b. Ivan wrote up \*(a letter).

This occurs when a secondary predicate which introduces an argument is selected to combine with a verb which does not have an obligatory surface internal argument of its own. Exactly the same thing can be observed in Slavic.

- (28) a. Ivan pisal (pisjmo).  
*Ivan wrote letter*  
 ‘Ivan was writing a letter’  
 b. Ivan na-pisal \*(pisjmo).  
*Ivan on-wrote letter*  
 ‘Ivan wrote a letter’ (Russian; Babko-Malaya 1999:18)

In the absence of an overt object, the Figure (or theme of motion) may be the subject.

- (29) a. Jump out.  
 b. Patients walked around.  
 c. We flew across.  
 d. The top fell off.

The same is true of Slavic languages.

- (30) a. Od-skočil metr od okna.  
*away-jumped meter away window*  
 ‘He jumped a meter away from the window’ (Czech; Filip 2003)  
 b. Dzieci w-skoczyły do wody  
*children in-jumped to water*  
 ‘The children jumped into the water’ (Polish; Lindvall 2001:158)  
 c. Penka pod-skoči do durvoto.  
*Penka up.to-jumped to the.tree*  
 ‘Penka jumped by the side of the tree’ (Bulgarian; Dimitrova-Vulchanova 2002)

This raises the interesting question of whether the Figure in such examples originates as an argument of the prefix, as was suggested for transitive cases, or whether control or predicate composition is involved. Romanova (2004b) argues for Russian that the directed motion verbs (with which lexical prefixes regularly combine) are unaccusative, and I will adopt that assumption here (for monovalent directed motion verbs; there are also transitive directed motion verbs, such as ‘carry’).

I have mentioned R several times in the exposition as a resultative head that confers resultative semantics on verb-particle constructions (including fully unaccusative ones, e.g. *The fish dried out in the sun*). An open question is whether the prefix in the Slavic constructions is actually R, as opposed to a P head complement to R. In Germanic, the matter is clearer because of constructions like that in (9), in which the particle does not occupy the R position, but in Slavic it is more difficult to distinguish an analysis in which R moves to V from one in which the highest head in the extended projection of P moves to R on its way to V. One possible argument that the Slavic prefix is R is that one can then stipulate that R always incorporates, and P never does, whereas if the prefix is P then incorporating P must be distinguished in some other way from non-incorporating P.

Another argument that the prefixes are R can be constructed on the basis of cross-linguistic observations about resultative constructions. Note that Slavic languages do not allow the free formation of resultatives like *shoot Dillinger dead*, the way Germanic languages do (Spencer and Zaretskaya 1998, Strigin and Demjjanow 2001).

- (31) a. Ona krasila dverj (\*zelënoj).  
           *she painted door green*  
           ‘She was painting the door (\*green)’ (Russian)
- b. Ostřihala si vlasy (\*krátké).  
           *cut.PST.F.SG RFX hair short*  
           ‘She cut her hair (\*short)’ (Czech)

I assume that the productive formation of resultatives in Germanic languages is due to a lexical item which speakers of Germanic have acquired, a null R compatible with a wide range of verbs and a wide range of secondary predicates. Slavic languages, on the other hand, form a large range of resultative constructions, but only with overt prefixes. This suggests that the prefixes are in fact instantiations of R. I return to the matter in §5.

### 3.3. Unaccusative particles

When there is an overt object, it is generally impossible to understand the subject of a Particle verb as the Figure.

- (32) a. Igor walked the door in.  
       b. Frances slid the pole down.

In these examples, there is no possibility of understanding the object as being stationary while the subject goes in or down, respectively. Instead, the only meaning that (32a) can possibly have is that Igor made the door go in by walking, for example Igor is a carpenter and carried a door into somewhere; similarly, the only meaning that (32b) can have is that Frances made the pole go down by sliding. These examples seem to leave up to world knowledge the specific connection between the resultee and the motion, but the external argument is necessarily the instigating causer. In the case of the door, if Igor rocks the door from bottom corner to bottom corner, he may make it ‘walk’ without himself walking; but (32a) is also consistent with Igor carrying the door under his arm and walking in on his own two feet.

Of course, prepositional constructions are quite different. The following examples are ambiguous.

- (33) a. Igor walked in the door.  
b. Frances slid down the pole.

On the prepositional reading, the preposition takes the DP as its complement, and therefore the DP is the Ground, rather than the Figure. Since the DP is the Ground, the subject is freely understood as the Figure.

There is a clearly circumscribed class of exceptions to the generalization made just above that the particle’s resultativity is never predicated of the surface subject in a transitive construction. These are what I will call unaccusative particle constructions (discussed in Svenonius 2003a).

English apparently has a few such constructions (the OV Germanic languages appear to have significantly more). Note that they are still resultative, underscoring the importance of R in the particle shift construction.

- (34) a. Fill in the hole.  
b. Fill the hole in.  
c. Empty out the bucket.  
d. Empty the bucket out.

In the first example in each pair, the DP follows the particle and the word order is indistinguishable from that of a prepositional construction. But in the second example in each pair, the word order indicates that these are particle constructions, rather than prepositional ones. Counter to the generalizations made above, the DP is nevertheless still appears to be the Ground of the particle, and the Figure is the subject.<sup>5</sup>

I suggest that such cases are similar to unaccusative constructions; the Ground is underlyingly the internal argument of the particle, as is usual,

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<sup>5</sup>In Svenonius (2003a), I argued that these particular examples are only apparent unaccusative particles, and that the particle has been reanalyzed to have an abstract, non-spatial meaning of which the DP is the Figure. However, real unaccusative particle examples exist, in the OV Germanic languages, so the phenomenon is real, whether or not it is found in English.

but exceptionally, these particles fail to assign case to that Ground element. Emonds (1985) suggested that the difference between a preposition and a particle is simply that a preposition has a complement, while a particle doesn't; thus prepositions are like transitive verbs and particles are like intransitive verbs. What I have suggested (in Svenonius 2003a) is that there are also unaccusative prepositions, that is, prepositions with a Ground argument to which they fail to assign case.

Slavic also shows such examples, which I will call 'unaccusative prefix' constructions.

- (35) a. Samoljot pere-letajet granicu.  
*plane across-flies border*  
 'The plane is flying across the border' (Russian)
- b. Ivan pre-pluva rekata.  
*Ivan across-swam the.river*  
 'Ivan swam across the river' (Bulgarian; Dimitrova-Vulchanova 2002)
- c. pře-plavat řeku  
*across-swim river*  
 'swim across the/a river' (Czech; Filip 2003)
- d. Pre-skocio je ogradu.  
*over-jumped is fence.GEN*  
 '[He] jumped over the fence' (Serbo-Croatian; Brala 2000)

In the Russian, Bulgarian, Czech, and Serbo-Croatian examples, the unprefixed variant of the verb would not take a Ground object, but the prefixed variant does, as if the preposition had simply incorporated away from its direct object. In each case, a doubling preposition is also possible; in Polish, the doubled preposition is obligatory with the prefix meaning 'across,' as illustrated.<sup>6</sup>

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<sup>6</sup>The result is strikingly similar, incidentally, to the historical developments in Greek and Romance.

- (i) a. boūs eis pónton bállō.  
*cattle into sea cast.1SG*  
 'I am driving cattle into the sea'
- b. boūs pónton eis-bállō.  
*cattle sea into-cast.1SG*  
 'I am driving cattle into the sea' (Classical Greek; Miller 1993:118)
- (ii) a. equum trāns Rhēnum dūcit.  
*horse across Rhine leads*  
 'He leads a horse across the Rhine'
- b. equum Rhēnum trā-dūcit.  
*horse Rhine across-leads*  
 'He leads a horse across the Rhine' (Latin; Miller 1993:122)

Doubling is also common.



- (36) a. Samoljot pere-letajet čerez granicu.  
*plane across-flies across border*  
 ‘The plane is flying across the border’ (Russian)
- b. pře-plavat přes řeku  
*across-swim across river*  
 ‘swim across the/a river’ (Czech; Filip 2003)
- c. Pre-skočio je preko ograde.  
*over-jumped is over fence.ACC*  
 ‘[He] jumped over the fence’ (Serbo-Croatian; Brala 2000)
- d. Kobiety prze-szły przez ulicę.  
*women across-walked across street*  
 ‘The women walked across the street’ (Polish; Lindvall 2001:158)

This recalls the examples already seen in which the Ground is sometimes obligatorily supported by a preposition which is not a double of the incorporated prefix.

- (37) a. Dzieci w-skoczyły do wody.  
*children in-jumped to water*  
 ‘The children jumped into the water’ (Polish; Lindvall 2001:158)
- b. Ivan pre-pluva do ostrova.  
*Ivan across-swam to the.island*  
 ‘Ivan swam over to the island’ (Bulgarian; Dimitrova-Vulchanova 2002)

In general, examples where a prefix introduces a Ground which becomes the direct object of the prefixed verb are not terribly common in Slavic. A couple of examples which do not involve ‘across’ are given here.<sup>7</sup>

- (iii) a. phármaka eis phréata eis-bállō  
*poisons in reservoirs in-cast.1SG*  
 ‘I throw poisons in reservoirs’ (Classical Greek; Miller 1993:119)
- b. equum ad aquam ad-fert  
*horse to water to-leads*  
 ‘[He] brings a horse to water’ (Latin; Miller 1993:123)

Miller (1993) shows that the derived object in Latin is case-dependent on the verb, for example in being promotable under passive (*Rhēnus trāns-itur*, ‘The Rhine is gone across’).

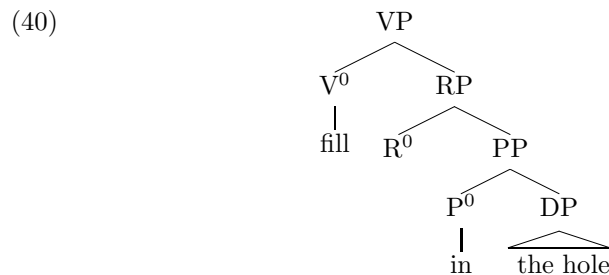
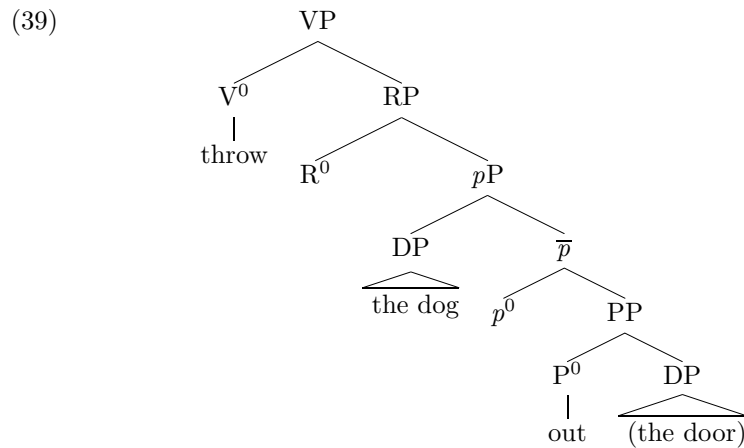
<sup>7</sup>Note, though, that ‘location’ objects are sometimes possible in Slavic languages without the contribution of the prefix, e.g.

- (i) a. Sereža bryzgaet vodu na belje.  
*Sereža sprinkles water on laundry*  
 ‘Sereža is sprinkling water on the laundry’
- b. Sereža bryzgaet belje vodoj.  
*Sereža sprinkles laundry water.INST*  
 ‘Sereža is sprinkling the laundry with water’ (Russian; Channon 1980:125)

However, this is not the case with most verbs, as Channon notes, nor is it the case for *gruziti* ‘load’ in (38b).

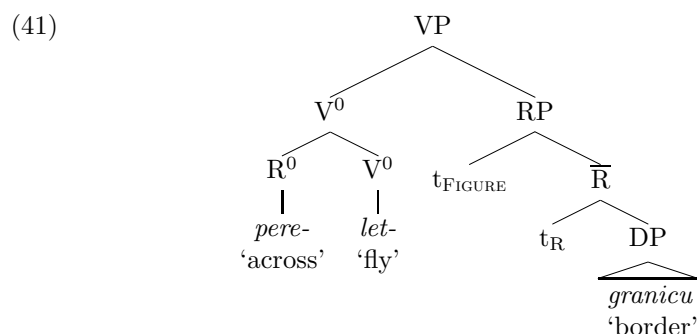
- (38) a. Lani je konstantno slabo vreme ... iz-praznilo  
*last.year is persistent bad weather out.of-emptied*  
 letovišča  
*resorts*  
 ‘Last year, the persistent bad weather ... emptied the resorts’  
 (Slovenian; Žaucer 2002:58)
- b. On za-gruzil telegu senom.  
*he onto-loaded cart hay.INST*  
 ‘He loaded the cart with hay’ (Russian; Romanova 2004a)
- c. Boris pro-exal ustanovku.  
*Boris through-rode stop*  
 ‘Boris rode past [missed] his stop’ (Russian; Fowler 1994:179)

I have suggested (Svenonius 2003a) that what distinguishes unaccusative particle constructions is the absence of a Figure-introducing  $p$  head, parallel to the Agent-introducing  $v$  of much recent work. This suggests that the Figure in such examples (i.e. the surface subject) is thematically introduced by the verb, in contrast to the usual case (see Ramchand and Svenonius 2002 for discussion of the thematic properties of the arguments in verb-particle constructions).



In (39), the presence of the external projection enables the PP to assign case to an internal argument, so the Ground if expressed is the complement of the P. Verbal case is available for the Figure in Spec $\mathcal{P}$ P. In (40), however, no internal case is available, as in the classic Burzio's Generalization cases, so the complement of P must get case from the verb, and does not surface as a prepositional complement.

A straightforward P-incorporation analysis would then be as follows for examples like (35a), assuming that these are essentially resultative and therefore involve R, and setting aside the question of whether there is also a distinct embedded P projection.



The predictions of this account include the following. First, the case of the object (including morphological realization of case but also sensitivity to case-related operations such as passive) should be that of an object of V, not of P (whether or not it has been reanalyzed as category R, as assumed above); in the cases available, both V and P govern accusative so the facts are compatible with the hypothesis, though not decisive. Second, since the presence or absence of  $p$  is analogous to the presence or absence of  $v$  and therefore lexically governed by P, the possibility of unaccusative prefix constructions like those in (35a) should be lexically restricted, either to individual P-V pairs (including perhaps Slovenian *iz-prazniti* in (38a)) or to individual P's (including 'across' in perhaps all Slavic languages). We do not expect to find, for example, a verb which systematically licenses unaccusative prefix constructions with all P, nor do we expect it to be sensitive to an adverb, an adjunct, or an aspect or tense. These predictions appear to be borne out.

### 3.4. Cooccurrence of particles and prefixes with prepositional phrases

I have used the label P as a general rubric for what is probably more accurately a variety of different kinds of members of the extended projection of the preposition, including Path heads and Place heads and perhaps some others. In Germanic, such elements combine in certain patterns, to form

tall PPs (see Koopman 2000, den Dikken 2003, Svenonius 2004e).

- (42)
- a. Several miles up above the valley rumbled a storm cloud.
  - b. From deep down inside of the mine we heard a muffled cry.
  - c. Straight back in from out beyond the walls came running the first messenger.

The question then arises, on the representations presented here, to what extent P elements in an extended P can extract from tall PPs to move to the R or V head attracting them.

At first glance, it appears that particles in English can leave extended PP material behind (cf. Svenonius 1994, den Dikken 1995).

- (43)
- a. We threw the orc **down** from the battlements.
  - b. We threw **down** the orc from the battlements.
  - c. We shoved the sacks of money **out** through the ventilation grate.
  - d. We shoved **out** the sacks of money through the ventilation grate.

However, there are indications that in English, particle shift only occurs when the particle is not part of an extended P projection. First of all, notice that the putative stranded material in (43) can stand alone and is not clearly dependent on the particle.

- (44)
- a. We threw the orc into the moat, from the battlements.
  - b. We shoved the sacks of money out of the vault, through the ventilation grate.

This makes it possible that in (43) the final PPs are not actually part of the particle's projection, in the examples where the particle has separated from them. When material in the extended PP is dependent on the particle, then stranding is impossible.

- (45)
- a. We threw the orc **out** of the window.
  - b. We threw **out** the orc (\*of the window).
  - c. We threw the orc (\*of the window).
  - d. We shoved the money **in** the van.
  - e. We shoved **in** the money (\*the van).
  - f. We shoved the money (\*the van).

Particle verbs sometimes select PPs, but then no shift occurs, and there is typically no resultative meaning.

- (46)
- a. I won't put up with this noise.
  - b. He gets along with his neighbors.
  - c. They look out for me.
  - d. We missed out on the free tickets.

Even when there is a resultative meaning, shift is impossible when the particle selects a particular PP.

- (47) a. That sent John **off** on a tangent.  
 b. \*That sent **off** John on a tangent.  
 c. The French teacher will take the class **off** to Paris.  
 d. \*The French teacher will take **off** the class to Paris.

This can be explained if, as suggested in Svenonius (1994; 1996a;b), and Ramchand and Svenonius (2002), a particle must have an incorporated Ground element in order to move to R, and this precludes the particle having any other complements or additional PP material (so that the extra PP material in (43) must be adjoined or otherwise outside the maximal projection of the particle). The proposal in the references cited was that movement to R was triggered by a kind of EPP effect, and P with an incorporated Ground was sufficiently nominal to satisfy the EPP in the RP small clause.

In this respect the Slavic languages appear to be different. Selected PPs often occur with prefixes (see Rojina 2004 for extensive discussion and examples), in fact they are often obligatory. A kind of doubling effect often arises, for example when *v* appears first as a prefix and then again as a preposition in (48b).

- (48) a. On vy-prygnul iz okna.  
           *he out-jumped out.of window*  
           ‘He jumped out of the window’  
 b. On v-lez v okno.  
           *he in-climbed in window*  
           ‘He climbed in the window’  
 c. Šajba pro-skoljzila po lǝdu.  
           *puck through-slid along ice*  
           ‘The puck slid along the ice’  
 d. Brevno pro-plylo pod mostom.  
           *log through-floated under bridge*  
           ‘The log floated under the bridge’ (Russian)

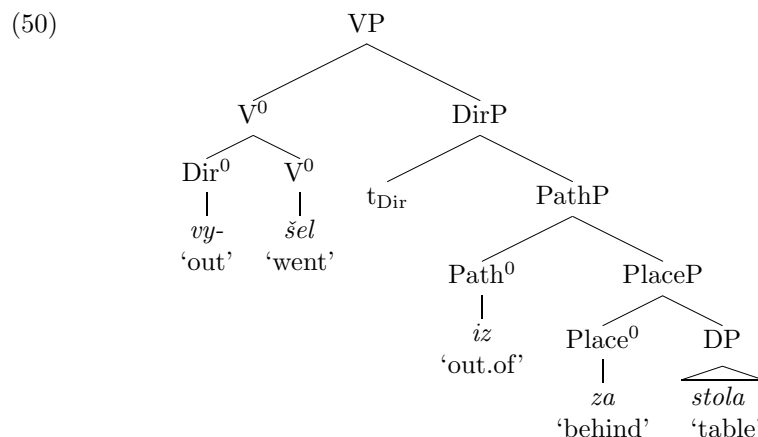
What this might indicate, given the analysis mentioned above, is that Slavic R to V is not triggered by EPP, but by something else.

Rojina (2004) observes that in some cases, there is more than one prepositional element in addition to the prefix.

- (49) On vy-šel iz-za stola.  
           *he out-went out.of-behind table*  
           ‘He got up from the table’ (Russian; Rojina 2004)

She proposes that the prefix incorporates from a highest head in the extended projection of the prepositional phrase, Dir[ectional], as illustrated

in (50) (see also Žaucer 2002 for arguments that the prefix is not a Path head).



For cases like those in (48) where only a simple preposition appears after the prefixed verb, Rojina assumes that the Path head is null, allowing a fully general analysis of lexical prefix incorporation as movement from  $\text{Dir}^0$  to  $\text{V}^0$ . For the time being I will follow this analysis (modulo the exact label of  $\text{Dir}$ , which could be  $\text{R}$ ), though I sketch an alternative in §5.

Thus, abstracting away from the head-movement versus phrasal movement issue, I assume that Russian allows movement of a piece of the outermost layer of an extended PP, as illustrated above. English particle constructions are essentially similar, though particle shift is movement of a projection of  $\text{P}$  to a position below the verb, above the object.

### 3.5. Idiomatic meanings

The straightforward spatial and directional meanings that I have focused on up to now are not the only use to which Germanic languages put their particles. Metaphorical extensions and abstract meanings are abundant, and there seems to be a tendency for verb-particle collocations to become idiomatized.

Idiomatic extensions are fairly transparent in some cases, as when *out* means ‘distributed’ in *spread out*, *hand out*, *send out*, and so on, or when *off* means ‘not energized’ as in *switch off*, *turn off*, *shut off*. In other cases they have become relatively opaque, as when *out* refers to a psychological state in *freak out*, *stress out*, *psyche out*, *bum out*, and so on, or when *up* means ‘thoroughly affected’ in *tear up*, *scratch up*, *burn up*, and so on. The compositionality of these examples is similar to the kind of compositionality one typically sees in idioms (cf. Nunberg et al. 1994), where idiomatic interpretations for individual words are available in wider or narrower frames of context.

Slavic shows clear parallels, for example *za-* which has various meanings including ‘in’ or ‘to’ can mean ‘to death’ in Russian *zabitj*, *zadušitj*, *zagryztj* and *zatiskatj*, meaning respectively ‘beat to death,’ ‘strangle to death,’ ‘gnaw to death,’ and ‘cuddle to death.’ Babko-Malaya (2003) points out a series of cases where *za-* means ‘to excess,’ given in (51) (Eugenia Romanova suggests, p.c., that a better gloss would be ‘cover the surface of’).

- |      |    |            |                    |               |             |
|------|----|------------|--------------------|---------------|-------------|
| (51) | a. | sypatj     | ‘pour, strew’      | za-sypatj     | ‘fill up’   |
|      | b. | litj       | ‘pour, spill’      | za-litj       | ‘flood’     |
|      | c. | bryzgatj   | ‘splash, spatter’  | za-bryzgatj   | ‘bespatter’ |
|      | d. | valitj     | ‘throw/bring down’ | za-valitj     | ‘block up’  |
|      | e. | gladitj    | ‘iron’             | za-gladitj    | ‘iron out’  |
|      | f. | gromozditj | ‘pile up’          | za-gromozditj | ‘block up’  |
- (Russian; Babko-Malaya 2003)

In many cases, a verb-particle collocation has an idiomatic sense which seems to be unique to that particular combination, for example in *take off* meaning ‘begin suddenly,’ or *write off* meaning ‘give up on,’ or for that matter *give up*. Again, Slavic provides ample parallels; for example Bulgarian *pro-dam*, literally *by-give*, meaning ‘sell,’ or Polish *przy-klaskiwać*, literally *across-clap*, meaning ‘agree,’ or Czech *od-větit*, literally *away-sentence*, meaning ‘answer.’ A few more Russian examples are given in (52) to illustrate the similarity to Germanic verb-particle constructions.

The idiosyncratic meanings of the Russian examples here may be compared to the spatial meanings in the parallel examples in §3.1 above.

- |      |    |             |  |
|------|----|-------------|--|
| (52) | a. | vy-dumatj   | <i>out-think</i><br>‘invent’; cf. English <i>think up</i>                              |
|      | b. | raz-jestj   | <i>around-eat</i><br>‘corrode’; cf. English <i>eat away</i>                            |
|      | c. | vo-plotitj  | <i>in-flesh</i><br>‘realize (e.g. a plan)’; cf. English <i>flesh out</i>               |
|      | d. | is-korenitj | <i>out.of-root</i><br>‘root out (e.g. evil)’; cf. English <i>root out</i>              |
|      | e. | pod-pisatj  | <i>under-write</i><br>‘sign’; cf. Norwegian <i>skrive under</i> “write under” = ‘sign’ |

Clearly, such meanings must be listed in the lexicon. Marantz (1984) has observed a tendency for idioms to correspond to syntactic constituents; for example, verb-object idioms (*kick the bucket*, *trip the light fantastic*, *put on the dog*, etc.) are quite common while subject-verb idioms with free

object positions are very rare (though there may be a few, such as *God damn [X]*).

Furthermore, idioms consisting of a functional element plus a lexical element are rare; that is, determiner-noun combinations do not tend to have a special meaning, nor do verb-auxiliary combinations. I return to this matter in §4.2 below, in the context of the superlexical prefixes, and argue that a plausible theory of idioms can account for the ready idiomatization of Germanic particles and Slavic prefixes alike.

### 3.6. Perfectivity

I pointed out in §3.2 that Germanic and Slavic are alike in that the particles or prefixes tend to add resultative meanings. However, they are different in that the Slavic prefix consistently adds telicity and perfectivity to the construction. Vitkova (2004) demonstrates this quite clearly for Bulgarian. First, consider the English pattern; telicity tends to correlate with quantization of the object for some verbs (e.g. *write*), but not with others (e.g. *heat*) (examples from Vitkova 2004).

- (53) a. John wrote poetry (for four hours/\*in four hours).  
 b. John wrote two pages of his article (in four hours/?for four hours).  
 c. John heated the pot (for ten minutes/in ten minutes).  
 d. John heated water (for ten minutes/in ten minutes).

The addition of a particle to this pattern may make an endpoint more salient, but does not automatically telicize, as Vitkova shows. In fact, for these examples it is essentially irrelevant to telicity.

- (54) a. John wrote down poetry (for four hours/\*in four hours).  
 b. John wrote down two pages of his article (in four hours/?for four hours).  
 c. John heated up the pot (for ten minutes/in ten minutes).  
 d. John heated up water (for ten minutes/in ten minutes).

In Bulgarian, however, prefixes have a strong telicizing effect, regardless of verb type and regardless of the quantization of the object (see Vitkova 2004 for minimal pairs; I gloss *za* here ‘in’ because it corresponds to English *in* in its temporal use; in non-temporal uses it more commonly corresponds to English *for*).

- (55) a. John iz-prazni          rezervoara (za čas/\*edin čas).  
           *John out.of-emptied the.tank in hour/one hour*  
           ‘John emptied out the tank (in an hour/\*for an hour)’  
 b. John pro-čete          poezia (za čas/\*edin čas)  
           *John through-read poetry in hour/one hour*  
           ‘John read up poetry (in an hour/\*for an hour)’



- c. John na-pisa dve starnici ot statjata si (za  
*John on-wrote two pages from the.article* RFX.POSS in  
 čas/\*edin čas).  
*hour/one hour*  
 ‘John wrote down two pages of his article (in an hour/\*for an  
 hour)’ (Bulgarian; Vitkova 2004)

The usual assumption is that this pattern is due to the presence of a perfective operator in the Slavic languages, that is, the examples here are telic because they are perfective. In that case, the difference between Germanic and Slavic here can be stated in terms of the perfectivizing function of the Slavic prefix, which is not a grammaticized function of the Germanic particle (cases like the obligatorily telic *eat up* have been made much of in the literature, but they are exceptional).

Plausibly, then, we might collapse two differences into one: Slavic particles prefix to the verb, and perfectivize; Germanic particles do neither (German and Dutch particles are clearly not attached to the verb since they are stranded under V2). Possibly, the perfective operator resides in the particle itself, in Slavic, and moves to V to take scope over the event variable that V introduces. I will reexamine these assumptions in §5.

#### 4. Lexical and superlexical prefixes

Having established that Slavic prefixes exhibit many distinctive characteristics of Germanic verb-particle constructions, I now turn to the lexical-superlexical distinction, to show that the superlexical prefixes are importantly different from the lexical ones and from the Germanic particles.

##### 4.1. Superlexical prefixes

Superlexical prefixes are identified by various diagnostics, some of which I will detail in the following subsections. Phonologically, they are not generally distinct from lexical prefixes, being drawn from the same prepositional inventory. Their meanings, however, are non-spatial and non-idiomatic, and I distinguish them systematically in the glosses, glossing them with small capitals to stress their nature as part of the functional system.

Typical diagnostics include the following (some of which are language-specific; see e.g. Schoorlemmer 1995 for discussion of Russian).

- (56) Superlexical prefixes...
- a. do not allow the formation of secondary imperfectives (diagnostic invalid in Bulgarian)
  - b. can occasionally stack outside lexical prefixes, never inside
  - c. select for imperfective stems
  - d. attach to the non-directed form of a motion verb
  - e. have systematic meanings, not idiosyncratic ones

- f. have temporal or quantizing meanings, rather than spatial or resultative

A subclass of superlexical prefixes may violate one or more of these generalizations. For example, repetitive *pere-* in Russian, which corresponds approximately to the English prefix *re-*, could be characterized as having a temporal or quantizing meaning, rather than a spatial or resultative one (cf. (56f)), but nonetheless permits the formation of secondary imperfectives (cf. (56a) e.g. *pere-pisatj* ‘rewrite<sup>P</sup>,’ *pere-pisyvatj* ‘rewrite<sup>I</sup>’). Romanova (2004b) documents many more such mismatches.

In Bulgarian, where superlexical prefixes cooccur relatively freely (see Istratkova 2004), a fairly rigid order emerges (compare example (3) in §1).

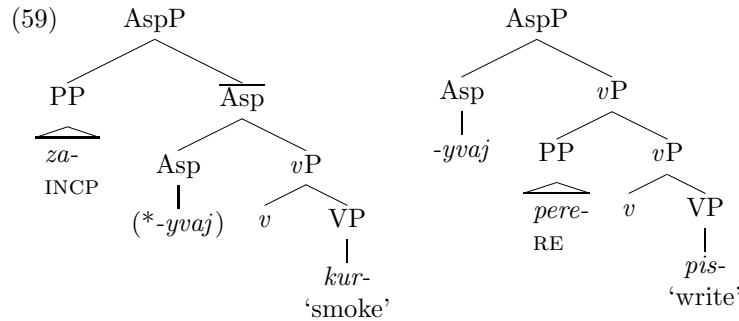
- (57) Order of superlexical prefixes in Bulgarian (based on Istratkova 2004)
- a. *za-* INCEPTIVE (INCP)
  - b. *iz-* COMPLETIVE (CMPL)
  - c. *po-* DELIMITATIVE (DLMT)
  - d. *na-* DISTRIBUTIVE (DSTR)
  - e. *pre-* REPETITIVE (RPET)
  - f. *raz-* EXCESSIVE (EXCS)

A similar order is evident in Serbian (Milićević 2004). In Russian, it is very difficult to combine superlexical prefixes (I assume this is because they all perform a similar delimiting function, cf. Filip 1999; 2000). However, an interesting indication of hierarchical order emerges if one considers the formation of secondary imperfective forms. For example, inceptive *za-* almost never forms secondary imperfectives in Russian (e.g. *za-kuritj* ‘start smoking<sup>P</sup>,’ \**za-kurivatj*). Attenuative *po-* generally resists secondary imperfectivization (*po-broditj* ‘wander for a little while<sup>P</sup>,’ \**po-braživatj*) but sometimes allows it (*po-čitatj* ‘read for a little while<sup>P</sup>,’ *po-čityvatj<sup>I</sup>*). As already noted, the repetitive *pere-* always allows secondary imperfectives. Thus, it seems that the lower (i.e. closer to the stem) the prefix is in Bulgarian, the more likely it is to form a secondary imperfective in Russian. This is roughly consistent with the possibility that certain superlexical prefixes are attached higher than the structural position of the secondary imperfective, while others are lower.

- (58) Formation of secondary imperfective in Russian
- a. No secondary imperfective
    - (i) *za-* INCEPTIVE
    - (ii) *ot-* TERMINATIVE
    - (iii) *pere-* DISTRIBUTIVE
  - b. Sometimes allow secondary imperfective
    - (i) *na-* CUMULATIVE
    - (ii) *pere-* EXCESSIVE

- (iii) *po-* ATTENUATIVE
- c. Usually allow secondary imperfectives
  - (i) *iz-* COMPLETIVE
  - (ii) *pere-* REPETITIVE
  - (iii) Lexical prefixes

For the straightforward cases in which a form allows or disallows secondary imperfective, it is simple to assume points of attachment above and below the secondary imperfective head, as sketched here.



The secondary imperfective does not combine with imperfective stems (*ku-ritj* ‘smoke<sup>I</sup>’, hence *\*kuryvatj*), and the subsequent attachment of a superlexical prefix is too late to be of help, in the tree on the left. In the tree to the right, however, *pere-pisatj* ‘rewrite<sup>P</sup>’ is perfective and the secondary imperfective attaches to it.

For mixed cases like cumulative *na-*, excessive *pere-*, and attenuative *po-* in Russian, I will assume that the ordinary point of attachment of such prefixes is outside the scope of the secondary imperfective, but that certain exceptional conditions allow a lower point of attachment.

For example, it seems that regular attenuative *po-* never actually forms a secondary imperfective; instead, the combination of *po-* with the secondary imperfective gives rise to a special reading, the so-called ‘attenuative-frequentative’ (Isačenko 1960); thus *po-čityvatj* does not mean ‘read for a little while<sup>I</sup>’, which would be the secondary imperfective of *po-čitatj*, but rather ‘read once in a while<sup>I</sup>’ or ‘read distractedly, not intently<sup>I</sup>.’ For discussion of cases where cumulative *na-* appears to undergo secondary imperfectivization, see §4.2.

There are some mismatches among the languages. For example, the Bulgarian completive *iz-* appears quite high, but in Russian completive *iz-* combines frequently with the secondary imperfective, suggesting that it is low (like English completive *up*; see Vitkova 2004). In Polish, the inceptive allows secondary imperfectives, suggesting that it is lower than in Russian; furthermore, it can appear below the distributive *po-* (e.g. *po-zakochiwać się*, ‘fall in love one after the other’; Patrycja Jabłońska, personal communication).

#### 4.2. Idiomatic meanings

It is quite striking, given the manifold meanings of the lexical prefixes, that the superlexical prefixes rarely have idiomatic meanings. Idiomatic meanings are not always easy to detect, but a lexical prefix typically provides dozens of examples in which the specific contribution of the prefix is unclear, or is unique to a single verb or a small class of verbs. This is not the case with the superlexical prefixes.

Consider, for example, the shading of meanings from literally spatial to abstract to metaphorical to completely idiomatic in the following Russian examples, for the ‘same’ lexical prefix.

- (60)
- a. iz-gnatj *out-chase* ‘drive away’
  - b. iz-lučitj *out-shine* ‘emit’
  - c. iz-ložitj *out-put* ‘put into words’
  - d. iz-litj *out-pour* ‘pour out [soul, emotions]’
  - e. iz-bratj *out-take* ‘elect’
  - f. iz-datj *out-give* ‘publish’
  - g. iz-motatj *out-spin* ‘exhaust [e.g. nerves]’

It appears that such a range simply cannot be found for superlexical prefixes. What is typical is something like the pattern seen in (61).

- (61)
- a. pere-kidatj DSTR-*throw* ‘throw one by one’
  - b. pere-kusatj DSTR-*bite* ‘bite one by one’
  - c. pere-bitj DSTR-*beat* ‘beat one by one’
  - d. pere-žečj DSTR-*burn* ‘burn one by one’
  - e. pere-pačkatsja DSTR-*sully* ‘sully one by one’

This is not to say that every superlexical prefix can be simply translated into a single adverbial expression. Consider the following interesting paradigm, from Součková (2004b), for example.

- (62)
- a. Jakub o tom po-přemýšlel.  
*Jakub about it ATTN-thought*  
‘Jakub thought about it for a little while’
  - b. Jakub úlekem po-od-skočil.  
*Jakub fright.INST ATTN-away-jumped*  
‘Jakub jumped away a little from fright’
  - c. Babička během nemoci po-hubla.  
*grandmother during sickness ATTN-lost.weight*  
‘Grandmother lost a little weight while she was sick’ (Czech; Součková 2004b)

In (62a), *po-* quantifies over duration, while in (62b) it quantifies over distance and in (62c) it quantifies over the degree of the property attained by the internal argument (here, the subject). Součková argues nonetheless

that there is a single unified analysis for attenuative *po-* (thus, there is no distinct delimitative *po-*, as suggested by the gloss in (62a)), as a measure quantifier meaning essentially ‘a little’ (as suggested here by the translations). The meaning contribution is sensitive to the content of the VP, but it is not idiosyncratic for an individual verb. The contribution is quite straightforwardly that of delimitation, and the event structure of the VP determines how modification by *po-* is cashed out.

One puzzle is the fact that distributivity can be signalled by *pere-* or by *po-* in Russian, without it being obvious why some stems only combine with the one (*pere-lomatj* ‘break one by one’) and some with the other (*po-padatj* ‘fall one after the other’), with apparently the same semantic effect. This looks like lexically idiosyncratic allomorphy, and might mean that the distributive prefixes, which always quantify over internal arguments, do originate inside the verb phrase, but as a part of a DP, rather than as a part of the RP or PP predicate.<sup>8</sup>

Other examples are scattered and must be dealt with on a case-by-case basis. For example, cumulative *na-* tends to pattern with superlexical prefixes, for example in resisting secondary imperfective formation. Here, the verb *na-kolotj* is ambiguous between a superlexical reading ‘crack a lot of’ and an idiosyncratic lexical meaning ‘cheat’; only the latter allows a secondary imperfective.

- (63) a. On na-kolol orexov.  
           he CMLT-cracked<sup>P</sup> nuts  
           ‘He cracked a sufficiently large quantity of nuts’  
       b. \*On na-kalyval orexov.  
           he CMLT-cracked<sup>I</sup> nuts  
           (‘He was cracking a sufficiently large quantity of nuts’)  
       c. On na-kalyval klijentov.  
           he on-cracked<sup>I</sup> clients  
           ‘He was cheating the clients’ (Russian)

There is a secondary imperfective of *na-jestj* ‘eat a lot’; if *na-jestj* is a cumulative prefixed verb, then this would be a counterexample to (56a). But on closer examination, it turns out that *na-jestj* does not have the cumulative prefix *na-* at all; historically, it may have, but *na-* here has been reanalyzed as an idiosyncratic resultative prefix, which takes unselected objects (as in (64a)) and does not take genitive plural objects like a regular cumulative-prefixes verb (as shown in (64c); compare (64b) or (63a)).

<sup>8</sup>Eugenia Romanova has pointed out to me that the vast majority of cases of distributive *po-* occur only with already prefixed verbs; *po-padatj* and *po-brosatj* ‘throw one by one’ appear to be counterexamples to this, but perhaps there is some connection to the fact that they belong to the special class of verbs with alternating perfective-imperfective stems; cf. (71) in §4.5.

- (64) a. V otpuske v Grecii on na-jel ogromnoje brjuxo.  
*in vacation in Greece he on-ate huge belly*  
 ‘On his vacation in Greece he ate his belly huge’  
 b. On na-bral olivok.  
*he CMLT-gathered olives.GEN*  
 ‘He gathered a sufficiently large quantity of olives’  
 c. \*On na-jel olivok.  
*he CMLT-ate olives*  
 (‘He ate a sufficiently large quantity of olives’)

Similarly, Russell (1985) argues that in general, when ‘quantitative’ readings of *na-* allow secondary imperfectivization, it is because there has been a change in the meaning of *na-*. A different example is the following.

- (65) a. při-skočit *to-jump* ‘jump to’  
 b. po-při-skočit *ATTN-to-jump* ‘help in a quick and obsequious manner’ (Czech, Filip (2003))

Here, there are two prefixes, so the outermost one must be superlexical, on my assumptions. Yet the meaning appears to be idiomatic. One possibility is that the apparently lexical prefix *při-* has in this case been reanalyzed with the stem, allowing *po-* in this case to be reanalyzed as a lexical prefix. It seems more likely, however, that idiom formation with superlexical prefixes is not actually outright impossible. The preferred account, then, should be consistent with rarity but not total absence.

If superlexical prefixes are introduced outside VP, as I suggest here, then the failure of idiomatic combinations to form is part of a phenomenon well-known since Marantz (1984), that idioms form naturally among VP-internal elements and less naturally across the VP boundary. Such a general tendency might reflect a tendency for the lexicon to store constituents, and to favor constituents without open argument positions in them; however, there are problems with such a characterization, not least the existence of open positions in idioms like *pull the wool over X’s eyes* or *take X to the cleaners*.

Furthermore, the characterization of the general tendency does not seem sufficiently robust to account for what appears to be a startling asymmetry; despite the prolific use of both types of prefix in Slavic languages, and despite the very frequent drift of the lexical type into idiomatic shades of meaning, the superlexical type appears to form idioms with associated verbs no more often than do functional elements like auxiliaries.

Marantz (2001) suggests that many words are idioms, in the sense that structures of more than one syntactic atom are stored with idiosyncratic meaning associations, but that there may be a strict boundary for such associations at the level of the phase, the unit of syntax which is relevant for the interfaces in Chomsky (2000; 2001; 2004).

A particular syntactic head *v* is generally associated both with the edge

of the verb phrase and with phasehood. There is some question whether only transitive verb phrases are phases, as suggested by Chomsky (2001), or whether all verb phrases are phases; see Legate 2003, Svenonius 2004b for some discussion. If I may assume for the present discussion that all verb phrases are phases, and that phases are the domain of idiom formation (multi-phase idioms might be stored, but would presumably require a different order of memorization, whereas phase-internal clusterings are quite natural), then it falls out naturally that lexical prefixes should form idioms—not necessarily, but readily—and that superlexical prefixes should not (or not easily).

### 4.3. Argument structure

The assumptions made here regarding the syntactic projection of argument structure are embedded in a well-developed theory of argument structure projection, based on such work as Baker (1988), Hoekstra (1988), Déchaine (1992), Williams (1994), Kratzer (1996), Hale and Keyser (2002), Pylkkänen (2002), Ramchand (2003), ?, and related work.

For this reason, the VP-internal hypothesis here, which puts lexical prefixes inside the verb phrase, makes clear predictions about the kinds of effects that such prefixes may have on argument structure, effects which will distinguish them sharply from VP-external elements like the superlexical prefixes.

Recall from §3.2 that lexically prefixed verbs take unselected arguments and make objects obligatory which are otherwise optional.

- (66) a. Ivan pisal (pisjmo).  
           *Ivan wrote letter*  
           ‘Ivan was writing a letter’  
       b. Ivan na-pisal \*(pisjmo).  
           *Ivan on-wrote letter*  
           ‘Ivan wrote a letter’ (Russian; Babko-Malaya 1999:18)

According to the analysis presented here, this is exactly parallel to the obligatoriness of unselected arguments in the presence of secondary predicates in examples like *We drank \*(the bar) dry* or *They cooked up \*(some vittles)*.

Superlexical prefixes cannot have this kind of effect, because they are introduced outside the verb phrase. Most superlexical prefixes do indeed appear to be oblivious to the argument structure of the verb, except to the extent that they require something that can be telic in most cases.

For example, inceptive *za-* and delimitative *po-* have no effect on the argument structure of the verb.

- (67) a. Ivan za-pel (pesnju).  
           *Ivan INCP-sang song*

- ‘Ivan started to sing (a/the song)’  
 b. Ivan po-čital (knigu).  
*Ivan DLMT-read book*  
 ‘Ivan read (a book) for a little while’ (Russian; Babko-Malaya 2003)

There are some interesting examples in which a superlexical prefix interacts with arguments of the verb. For example, cumulative *na-*, meaning ‘a lot of,’ can only attach to transitive verbs, and requires the object to be overt. When the object is reflexive, the meaning is something like ‘to one’s heart’s content,’ but when the object is not reflexive, *na-* quantifies over the object (which must be mass or plural, and in Russian must also be in the genitive case; see Filip 2000, Součková 2004a, Pereltsvaig 2004). Similarly, the distributive prefix quantifies over the internal argument.

- (68) a. Petr na-pekl housky.  
*Peter CMLT-baked rolls*  
 ‘Peter baked a lot of rolls’ (Czech; Filip 2000)  
 b. Deti po-rozbíjely sklenice.  
*children DSTR-broke glasses*  
 ‘The children broke each glass’ (Czech)

I assume that these prefixes involve a kind of selective quantification, but do not have anything to do with the argument structure of the verb; they do not, for example, license unselected objects. Quite plausibly, the prefix originates inside an internal argument, and moves to the prefixal position.

Another interesting example is durative or perdurative *pro-* in Russian, which can require a temporal adverbial.

- (69) a. Ivan sidel tixo (čas).  
*Ivan sat quietly hour*  
 ‘Ivan sat quietly (for an hour)’  
 b. Ivan pro-sidel \*(čas).  
*Ivan PRDR-sat hour*  
 ‘Ivan sat for an hour’ (Russian; Fowler 1994)

But (as Fowler notes), the argument structure of the verb remains unaffected by the addition of this element, so it is consistent with both the prefix and the temporal adjunct being added outside the verb phrase.

#### 4.4. Structural uniqueness

I have argued that lexical prefixes originate as part of an extended complement to V. Given the assumption that phrase structure is essentially binary, this greatly limits the possibilities for multiple lexical prefixes to occur.

Previous accounts have essentially had to resort to stipulation to capture



the uniqueness of lexical prefixes. Filip, for example, appeals to Tenny's (1994) *Single Delimitation Constraint*, but given that the superlexical prefixes tend to delimit as well, this cannot explain why lexical prefixes are so much more difficult to combine than superlexical prefixes. Babko-Malaya (1997; 1999; 2003) builds the constraint into the semantic representations for the prefixes, but this does not explain why they have those particular representations and not something else, something which might allow lexical prefixes to combine with each other.

Since I postulate a single predicative position for resultative predicates, and propose that superlexical prefixes are those which do not appear in that position, I make a strong claim about the uniqueness of lexical prefixes.

The account equally well covers the distribution of particles in Germanic, which are very reluctant to cooccur. Essentially, only *back* can cooccur with other particles in a verb-particle construction, and then only in its reversative meaning (*throw it back out* means 'throw it out again,' not 'throw it out and towards the back').<sup>9</sup>

Given the layers of P elements noted to exist in the spatial examples given above, it is a reasonable question why multiple P elements from a single extended projection do not incorporate, e.g. from *roll ball to under chair* to *under-to-roll ball chair*; but in §5 I suggest that something like this does happen, under very limited circumstances.<sup>10</sup>

#### 4.5. The scope of the secondary imperfective

Prefixes in general (both lexical and superlexical) confer perfective aspect on the verbs to which they attach (cf. Smith 1991, Babko-Malaya 1999, Filip 1999, Dickey 2000, Borik 2002, Ramchand 2004, and much previous work).

A few stems make the perfective-imperfective distinction in the theme vowel, many without any overt prefix.

- (70) a. brositj 'toss<sup>P</sup>' ~ brosatj 'toss<sup>I</sup>'  
 b. kinutj 'throw<sup>P</sup>' ~ kidatj 'throw<sup>I</sup>'  
 c. pastj 'fall<sup>P</sup>' ~ padatj 'fall<sup>I</sup>'  
 d. (u-)kusitj 'bite<sup>P</sup>' ~ kusatj 'bite<sup>I</sup>'

For these stems, superlexical prefixes normally combine with the basically imperfective form, while lexical prefixes combine with the basically perfective form (Russian examples; cf. Romanova 2004b).

<sup>9</sup>The directional meaning of *back* survives in the expression *out back* meaning 'out in the back,' but this fails to undergo particle shift (*take the prisoner out back* vs. \**take out back the prisoner*), unlike *back out* (*take the prisoner back out* — *take back out the prisoner*).

<sup>10</sup>Note that Rojina (2004) has suggested successive-cyclic head movement for reversative *re-* in English, deriving *re-over-turn* from [<sub>VP</sub> *turn* [<sub>PP</sub> *over-* [<sub>reP</sub> *re-* ]]].

- (71) a. na-brositj ~ na-brosatj  
*on-toss* CMLT-*toss*  
 ‘toss on’ — ‘toss a lot of’
- b. pere-kinutj ~ pere-kidatj  
*across-throw* DSTR-*throw*  
 ‘throw across’ — ‘throw one by one’
- c. po-pastj ~ po-padatj  
*along-fall* DSTR-*fall*  
 ‘find oneself somewhere’ — ‘fall one after the other’
- d. za-kusitj ~ is-kusatj  
*onto-bite* CMPL-*bite*  
 ‘eat sth after drinking’ — ‘bite all over’

The basic pattern appears to be that there is allomorphy for *v* (the ‘little *v*’ head, which I assume is realized by the theme vowel, including its null allomorphs (cf. Svenonius 2004d and Jabłońska 2004). One choice is taken when there is a perfectivizer at the point of lexical insertion into *v*. Assuming the phase of Chomsky (2000; 2001), the domain of lexical insertion is *v*P, so at the point of lexical insertion only VP-internal material is present. I assume that the unprefixated forms like *brositj* and *pastj* have null lexical prefixes (cf. Fowler 1996).

If no lexical prefixes are present, then for this class of verbs, the form *-aj* is inserted in *v* (underlying *bros-aj-tj*, *kid-aj-tj*, *pad-aj-tj*, *kus-aj-tj*, realized as the imperfective forms in (70) after phonological CC simplification).<sup>11</sup> Since superlexical prefixes are added outside the first phase, the selection of the ‘unprefixated’ alternate of the stem has already been made, at the point of lexical insertion, and cannot be undone.<sup>12</sup>

Whether this account of the morphological alternation as context-sensitive allomorphy is correct or not, the facts can be descriptively characterized by saying that the superlexical prefix ‘selects’ for an imperfective stem. Importantly, this applies to the secondary imperfective as well.

The secondary imperfective is a suffix which attaches to a perfective verb to make it imperfective; it is typically restricted to stems with a lexical prefixes in most Slavic languages (though in Bulgarian it may also attach to stems with superlexical prefixes, see Istratkova 2004).

- (72) a. v-sta-tj ~ v-stav-a-tj  
*in-stand-INF<sup>P</sup>* *in-stand-IMPF-INF<sup>I</sup>*  
 ‘stand up’ (Russian)

<sup>11</sup>Sometimes a morphophonological process inserts a [v], as in *datj* ‘give<sup>P</sup>’ ~ *davatj* ‘give<sup>I</sup>’. See Flier (1972).

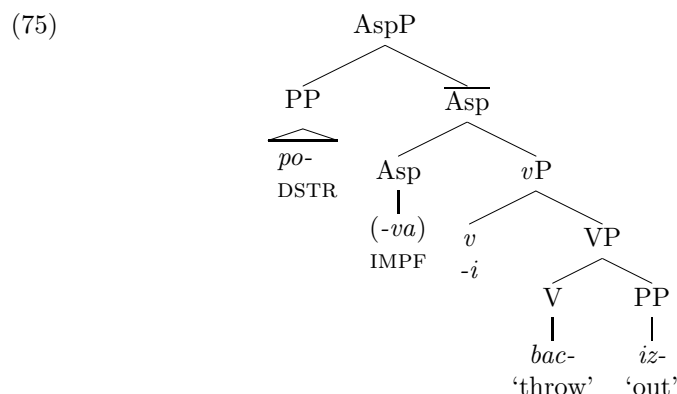
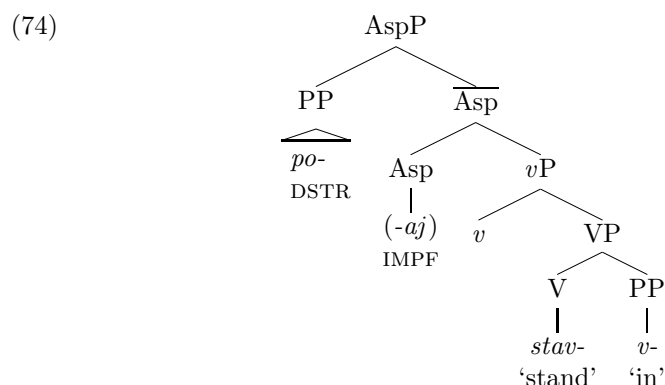
<sup>12</sup>This account leaves open the possibility that a lexical prefix might idiosyncratically combine with the *-aj* suffix, as appears to occasionally be the case, e.g. for *za-brosatj*, ‘cover by throwing’ or *za-plevatj* ‘cover by spitting,’ as noted by Romanova (2004b).

- b.    *iz-bac-i-ti*                    ~ *iz-bac-i-va-ti*  
       *out-throw-v-INF<sup>P</sup>*        *out-throw-v-IMPF-INF<sup>I</sup>*  
       ‘throw out’ (Serbian)

When a superlexical prefix attaches outside a lexical prefix, the secondary imperfective morpheme is often obligatory (see also Romanova 2004b); but the resulting form is perfective, not imperfective.

- (73) a. \**po-v-sta-tj*                    ~ *po-v-stav-a-tj*  
       *DSTR-in-stand-INF*        *DSTR-in-stand-IMPF-INF<sup>P</sup>*  
       ‘stand up one by one’ (Russian)  
       b. \**po-iz-bac-i-ti*                    ~ *po-iz-bac-i-va-ti*  
       *DSTR-out-throw-v-INF*        *DSTR-out-throw-v-IMPF-INF<sup>P</sup>*  
       ‘throw out one by one’ (Serbian)

This pattern shows that the superlexical prefix scopes over the secondary imperfective suffix, while the lexical prefix scopes under it (cf. also Filip 2000), as illustrated in the trees here.



Of course, there may be some prefixes which originate below Asp, and are therefore inside the scope of the secondary imperfective, but still outside

*vP*; in fact, I suggested this for Russian reversative *pere-* above. Other possibilities include ‘out of control’ *u-* (Jabłońska 2003) and ‘Agent oriented’ *raz-* (Slabakova 1997). In such cases, it may be desirable to make a finer distinction than the coarse two-way split between lexical and superlexical. In any case, however, the majority of superlexical prefixes appear to be higher than *Asp*, and all lexical prefixes are lower.<sup>13</sup>

#### 4.6. Nominalizations

Given the strong correlation assumed here between syntactic structure and morphological structure, another prediction made by the basic organization of prefixes in different parts of the syntactic tree is that the higher ones may be outside the scope of derivational morphological processes such as nominalization, even as the lower ones are caught under it. In particular, the strong prediction is that if a superlexical prefix may be part of a non-verbal form, then a lexical prefix may be as well, but not necessarily vice-versa.

Slavic exhibits complex nominalization patterns. Both perfective and imperfective forms of verbs can provide the basis for nominalization.

- (76) a. *ras-smotr-e-tj* ~ *ras-smotr-e-n-ie*  
*around-look-v-INF*    *around-look-v-PASS-NOM*  
 ‘examine<sup>P</sup>’ — ‘examination (abstract action)’  
 b. *ras-smatr-iva-tj* ~ *ras-smatr-iva-nie*  
*around-look-IMPF-INF*    *around-look-IMPF-PASS-NOM*  
 ‘examine<sup>I</sup>’ — ‘examination (concrete action)’ (Russian; Comrie 1980:212)

Superlexical prefixes are not ordinarily included in nominalizations, though repetitive *pere-* can be. For example, Russian *peresmotretj* is ambiguously prefixed by repetitive *pere-* or by distributive *pere-*, as indicated in (77a); but only the former may be nominalized, as suggested by (77b).

- (77) a. *pere-smotr-e-tj* ~ *pere-smotr-e-tj*  
*RPET-look.at-v-INF*    *DSTR-look.at-v-INF*  
 ‘reconsider’ — ‘look at one by one’  
 b. *pere-smotr-e-n-ie*  
*RPET-look.at-v-PASS-NOM*  
 ‘reconsideration’ (\*‘looking at one by one’)

<sup>13</sup>Secondary imperfective forms of superlexically prefixed verbs, when they exist, often have an habitual or iterative reading only, and lack the progressive reading ordinarily available for imperfectives, at least in Russian (Flier 1985). Ramchand (2004) proposes that there is an iterative aspectual head distinct from the progressive and higher up; then those superlexical prefixes which exhibit this effect are sandwiched between the two. The morphological expression of the two aspectual categories is the same, however, and they do not cooccur.

As it happens, the absence of superlexical prefixes from nominalizations is quite striking, while lexical prefixes appear even with root nominalizations, as in the following Czech examples (brought to my attention by Jakub Dotlačil).

- (78) a. *vy-kop-nou-t* ~ *vy-kop*  
*out-kick-v-INF*    *out-kick*  
 ‘kick off<sub>V</sub>’ — ‘kick-off<sub>N</sub>’  
 b. *na-rys-ova-t* ~ *na-rys*  
*on-draw-v-INF*    *on-draw*  
 ‘draw<sub>V</sub>’ — ‘outline, sketch<sub>N</sub>’  
 c. *vy-stav-ě-t* ~ *vy-stav-ba*  
*out-build-v-INF*    *out-build-NOM*  
 ‘construct<sub>V</sub>’ — ‘construct<sub>N</sub>’ (Czech, Jakub Dotlačil, p.c.)

Root nominalizations lack even the *v* element which is practically obligatory in the verb stem.

In the analysis presented so far, the structures are quite simple to derive; the lexical prefix incorporates to the root, and the superlexical prefix is introduced higher up, where the categorial specifications for the stem have already been determined to be non-nominal. Example (77) suggests that repetitive *pere-* is relatively low.

In the phrasal alternative, I will suggest in §5 that the prefix undergoes phrasal movement to an aspectual specifier. This complicates an understanding of the nominalizations, which apparently lack the aspectual projection. Instead, I assume that when a lexical prefix and a root are stored as an idiom, they are accessible for a compounding process. In other words, the nominalizations above are actually compounds. Interestingly there is some phonological support for this; Scheer (2001) shows that nominalizations of Czech prefixed verbs systematically have long vowels in the prefix, which is not true of the corresponding verbs. This suggests at least that the word-formation operation putting the prefix together with the root in the two cases is functioning differently.

Tentatively, I would suggest that the compounding process involves the putting together of two ‘word’-like units, each of which constitutes a minimal prosodic domain and is therefore minimally a foot, and bimoraic. Postlexical rules may reduce the length of a long prefix, if the stem contains a long vowel, but otherwise the nominal prefix surfaces as long. In the case of verbal prefixation, the prefix is not treated independently as a minimal prosodic domain, the relevant constraints only being considered for the prefix plus verb as a whole. In a sense, then, the prefix in SpecAspP is treated more like a clitic, being incorporated into the verb’s clitic group.

### 5. A phrasal analysis of Slavic prefixes

I have assumed a head-movement analysis of lexical prefixation up to this point. However, there are many respects in which a head-movement analysis is unsatisfying. For one thing, if the superlexical prefixes are also to attach to the stem by head-movement, then the verb will have to right-adjoin to the superlexical prefixes, by stipulation, since they originate higher up. If, on the other hand, superlexical prefixes attach to the verb by some other means, then it is worth exploring whether this other means could also account for the lexical prefixes.

The issue becomes more acute in the current climate, where the very existence of head movement as a syntactic device is increasingly commonly called into question.

Another problem with the head-movement account is the differing phonological closeness of the prefix compared with the suffix (cf. e.g. Pesetsky 1985, Fowler 1994), suggesting that there are two different morphological mechanisms at work; if the prefix is attached by head-movement, then the suffix must not be. This applies equally to whatever mechanism might be thought up to replace head-movement, e.g. Brody (2000): whatever mechanism is used for the suffixes is unlikely to work smoothly for the prefixes.

Some empirical concerns arise as well. For one thing, there are a few cases where something larger than a single head appears to be prefixed.

- (79) a. *iz-pod-riniti*      Petra *iz*      mesta *predsednika*.  
           *from-under-drive* Peter *from* place *president*  
           ‘drive Peter out from the place of the president’  
       b. *Tonček je s-pod-maknil*      stol.  
           *Tone is from-under-moved* chair  
           ‘Tone jerked the chair away’ (Slovenian; Žaucer 2002:37–38)

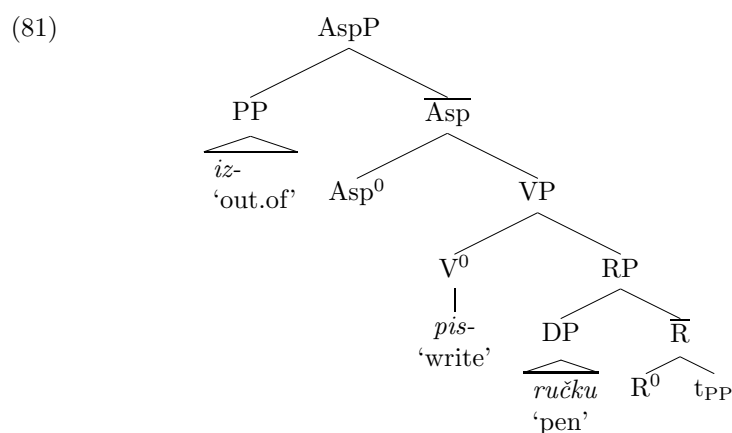
Here we appear to have two lexical prefixes attaching. Possibly, *iz-pod* has been reanalyzed as a single head (note that Žaucer sometimes spells it *spod* as in (79b)), in which case these examples show nothing interesting. However, if, as Žaucer suggests, *iz-pod* is still parsable in modern Slovenian as a complex head, then these examples suggest that when multiple lexical prefixes do attach to a verb, they do not do so by head movement. This is because the meaning of examples like (79a) is not ‘drive X under from Y’ but rather something more like ‘drive X from under Y.’ Thus, the underlying order must be *iz-pod*, and the order is preserved, as if a phrase containing the two P’s had moved. Head-movement would wrongly predict a reversal of order.

For all these reasons, it is worth contemplating an alternative to the head movement approach, namely that a Slavic lexical prefix moves to its perch to the left of the verb by phrasal movement (as suggested in Svenonius 2004c). I assume that as an operator over an eventual variable, it must take syntactic scope over that variable (cf. ?), with the result that the verb is

interpreted as perfective. I assume that it is the operator function of the prefix that makes it impossible for it to carry along more material. Žaucer (2002) argues that the additional piece in the Slovenian examples in (79) is an adjunct, consistent with the assumptions in Svenonius (2004e) about the structure of the extended projection of P more generally.

This means that simple resultative cases like (19a) from §3.2, repeated here as (80), might have a structure something like that in (81).

- (80) Ona is-pisala svoju ručku.  
       *she out.of-wrote* RFX.POSS *pen*  
       ‘She has written her pen out of ink’



Recall the arguments presented in §3.2 for equating the Slavic prefix with the node R. One was that R always incorporates, and on that analysis, P never does. On the analysis presented here, that simple statement of the facts is impossible. However, a simple generalization is also possible on this account. Namely, if it assumed that Slavic languages have a null quantificational DP which is an appropriate complement for P, but which needs to bind an event variable from a position c-commanding V, then several things fall together: the lack of particles in situ (if all particles have some complement, and when they have the null DP complement they are pied-piped by its scope-taking movement), the lack of complements to P in the pre-verbal position (only the null DP has the requisite properties to force movement), and the perfectivizing effect of prefixation (if the binding of the eventual variable has this effect; see ?).

A second argument presented in §3.2 for equating the prefix with R involved the cross-linguistic distribution of resultatives. Recall that the presence in Germanic of a productive resultative construction was analyzed as evidence that Germanic has a null R which can freely select resultative predicates. Since Slavic does not have a productive resultative construction with a free resultative predicate, it was suggested that Slavic could only form resultatives with specific R's, i.e. prefixes. But the productivity

of resultative formation with prefixes suggests that the generalization was misstated. It is not that Slavic cannot productively form resultatives, only that the resultative predicates must be prefixes. Thus, an alternative to the analysis presented in §3.2 is that Slavic, like Germanic, does have a productive resultative-forming null R, but in Slavic it only selects particles, while in Germanic it also selects APs.

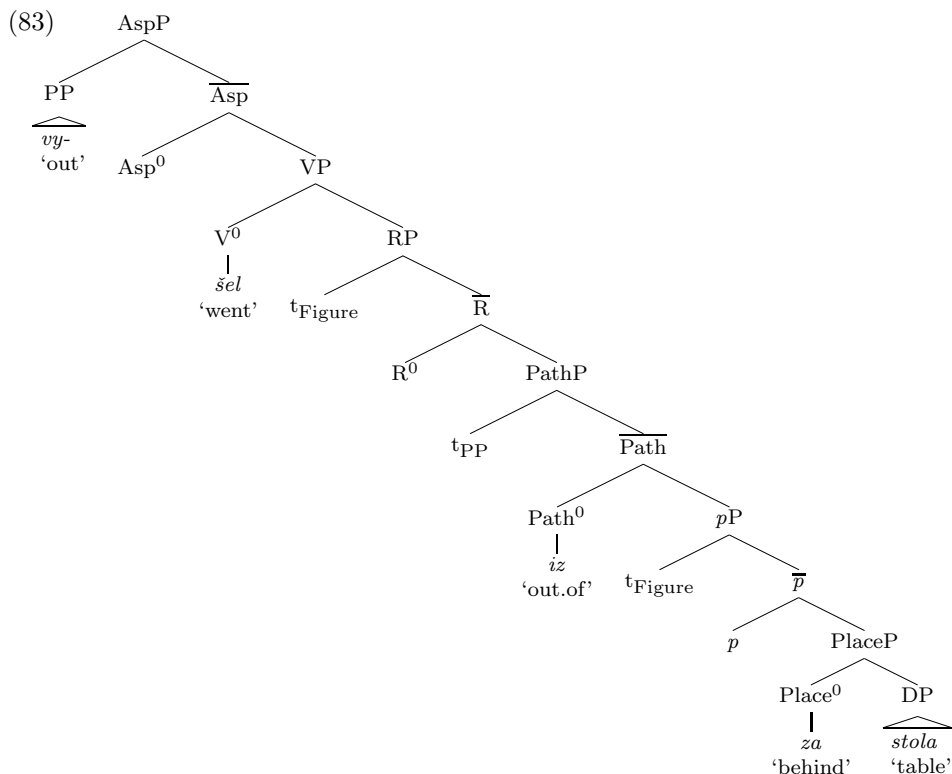
Recall from §3.4 that Slavic prefixes often require a PP complement to the verb. This contrasts with English, I argued, where particles are typically incompatible with complements. I suggested that English particles had a null Ground object, which prevented them from taking other complements; but now I have suggested a distinct null complement to the Slavic particle, a quantificational DP that determines the perfective aspect.

The Slavic facts suggest that a prefixal PP may originate as a dependent of a PP complement to R. Recall the example (49) in §3.4, repeated here as (82).

- (82) Ivan vy-šel    iz-za            stola.  
       Ivan out-went out.of-behind table  
       ‘Ivan got up from the table’

This might now be diagrammed as in (83), where the ‘particle’ or prefixal phrase originates as an adjunct to PathP (see Svenonius 2004e for arguments that particles in English are adjuncts in their extended projections, when they appear with other material).





As for why *vy-* cannot appear as a prefix without a PathP complement, this would be because the argument *stola* ‘table’ is introduced not by *vy-* but by the PathP, specifically in the *pP* projection, as indicated in (83).

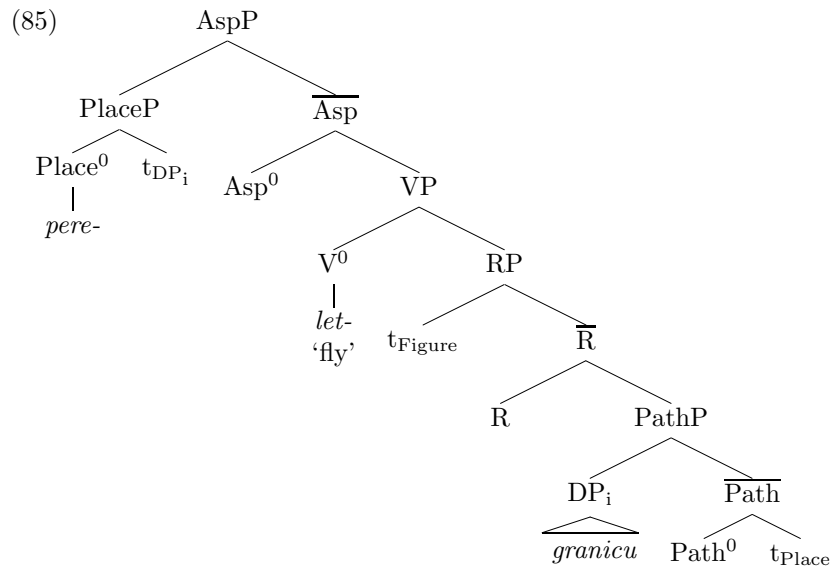
The contrast with English, where a particle never requires a PP, is still accounted for on some fairly plausible assumptions, namely that only a P with an incorporated Ground can incorporate, and that particles which function as adjoined modifiers of larger PPs do not have incorporated Grounds.

This analysis predicts, unlike the head-movement analysis, that the P element which incorporates may not be the highest head in the extended projection of P. This seems to be a good result, judging from the examples in (30), repeated here as (84).

- (84) a. Dzieci w-skoczyły do wody  
*children in-jumped to water*  
 ‘The children jumped into the water’ (Polish; Lindvall 2001:158)
- b. Penka pod-skoči do durvoto.  
*Penka up.to-jumped to the.tree*  
 ‘Penka jumped by the side of the tree’ (Bulgarian; Dimitrova-Vulchanova 2002)

Here, the best paraphrase for the Polish would be likely to be ‘jumped [to [in the water]],’ rather than ‘jumped [in [to the water]]’; but it is the locationally rich element which incorporates. Similar considerations apply to the Bulgarian example. On the assumption that the directional particle is a phrasal adjunct to PlaceP, below the Path head (‘to’), as proposed in Svenonius (2004e), there is no reason that particle should not be able to cross the Path head to move into the specifier of Asp, to the left of the verb.

This means that the unaccusative prefixes discussed in §3.3 cannot involve head movement either, but must be more complex, e.g. as in the remnant movement analysis sketched here.



Of course, if a null P were postulated for these cases, then *pere-* could originate in an adjoined or specifier position in the extended projection of P, and no remnant movement would be involved.

As to why no other material can intervene between the prefix and the verb, there are two obvious possibilities, namely either that some morphological property of the prefix can require it to be left-adjacent to V, or that the specific mechanism of eventual variable binding that the prefix enters into is disrupted by other material intervening between the prefix and the verb.

Note that in German, a particle is clearly a separate phrase from the verb given that it is separated by V2. There are also more subtle reinforcing indications: the infinitival marker *zu* and the participial prefix *ge-* appear between the particle and the verb, and under certain circumstances particles can even topicalize, see Zeller (2001). If a German dialect were to lose the trigger for verb movement, then verbs would remain in situ and the most

obvious evidence for the phrasal nature of the particle would be lost. It does not follow that the particle would then be reanalyzed as a part of the verb. The syntax of modern German does not provide many tools for moving the particle away from the verb, even though it is obviously phrasal. Conceivably, the semantics of the particle in Russian is enough to demonstrate to the learner that it is phrasal, and the syntax of modern Russian, just as with German, simply does not provide any mechanisms that would dislodge the particle.

## 6. Conclusion

I hope to have made a strong case for the basic premise that a substantial class of prefixes in the Slavic languages should be understood as originating in a prepositional complement of the verb, a syntactic configuration which gives them a certain limited range of interpretational possibilities and a proclivity for the formation of idioms. In contrast to these, I have argued, another large class of prefixes are fundamentally verb-phrase-external, originating in the IP domain and having adverb-like interpretations. I assume that both classes function as quantifiers over the event, making it perfective (perhaps in a way reminiscent of definiteness, as suggested by Ramchand 2004). I hope to have shown that a wide range of properties of the two types of prefix fall out from this basic assumption.

I have, in addition, provided two alternative technical solutions to the question of how the lexical prefix winds up to the left of the verb stem. The first is the head movement alternative, assumed for most of this paper. It is simple, but leads to a difference between lexical and superlexical prefixes. The second alternative, outlined in §5, is that the lexical prefix moves as a phrase into the preverbal position. This makes the lexical and superlexical prefixes structurally more parallel, but involves other complications, such as the status of R. Ultimately, I think, the choice between these two alternatives may hinge on the status of head-movement in the theory.

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